44

DART AEROSPACE LTD	Work Order:	19647
Description: Ø2.250 Support	**Part Number:**	D2891-1
Dwg: D2891 Rev. A1	**Qty:**	30
		Page 1 of 1

RF
03.06.09

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveller . Blank size makes (2) D2891-1 **Dwg not required**		03.12.19	30
2	PG	Issue P/O: 2013947 Description: D6104-003 Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104 **Material release note required.**		03-12-22	15
3	RG	Receive and Inspect for raw material dimensions. **Ensure material release note is attached.**		04/1/6	15
4	MS	Turn blank for Haas as per Folio FA046		04/02/20	15
5	QC1	Inspect all dimensions as per Dwg D2891		04/02/20	15
6	MV	Machine as per Folio FA046		05/04/18	15
7	MV	Tumble & Deburr		05/04/18	15
8	QC1	Inspect all dimensions to inspection sheet as per Dwg D2891		05/04/18	15
9	QC8	Inspect dimensions for second check		05/04/12	15
10	FP	Powder Coat White (4.3.5.2) per QSI 005 4.3		05/4/28	15
11	QC3	Inspect Powder Coat		05042 8	30
12	ST	Identify and stock		05042 8	30
13	AC	Cost / part 55.72		05.04.29	30
14	DC	Close W/O 57.36 Inspect Level 21		05.05.03	30

Rev	Date	Change	Revised By	Approved
A	00.12.19	New issue	EC	
B	01.07.17	Reformat	EC	
C	02.11.26	Added P/O	KJ / RF	

RELEASED
02.11.29 RF

Dart Aerospace Ltd

Work Order:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Manuf / Design Mgr	Approval QC Inspector

NCR		WORK ORDER NON-CONFORMANCE						
DATE	STEP	Description of NC section A	Intial	Corrective Action Section B	Sign & Date	Verification Section C	Approval Design Mgr	Approval QC Inspector

PAR#:_____ Fault Category:_____ DQA:_____ Date:_____

QA: N/C Closed: _____ Date:_____

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	19647
Description: Ø2.250 Support	Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	**Min**	**Max**	**Go/No Go Gauge**	**1**	**2**	**3**	**4**	**By**	**Date**
Lathe Section									
A	2.274	2.279		2.274	2.275	2.276	2.276	JNL	04/02/26
B	3.702	3.722		3.710	3.711	3.710	3.716		
C	2.564	2.584		2.574	2.574	2.574	2.575		
D	0.718	0.738	~~.733~~	.733	.732	.734	.732		
E	0.090	0.110	~~.101~~	.101	.100	.101	0.101		
F	2.464	2.484	~~2.474~~	2.474	2.474	2.474	2.475		
G	2.029	2.049	~~2.03~~	2.035	2.035	2.035	2.036		
H	2.964	2.984		2.974	2.975	2.976	2.974		
I	0.913	0.933		.914	.916	.917	.917		
J	0.022	0.042		R.032	R.032	R.032	R.032		
K	0.090	0.110		.098"	.099	.099	.106		
L									
HAAS Section									
AA	0.188	0.193	DT8706	✓	✓	✓	✓	JNL	05/04/18
AB	0.240	0.260		0.247	0.250	0.250	0.250		
AC	0.115	0.150		0.128	0.129	0.129	0.129		
AD	0.040	0.060		0.051	0.048	0.047	0.051		
AE	0.010	0.020		0.016	0.016	0.016	0.010		
AF	0.240	0.260		0.250	0.250	0.250	0.250		
AG	0.290	0.310		0.300	0.302	0.305	0.304		
AH	0.115	0.150		0.141	0.142	0.142	0.143		
AI	0.454	0.474		0.464	0.462	0.465	0.460		
AJ	2.779	2.789		2.782	2.783	2.785	2.786		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.031	1.031	1.033	1.031		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	DT8683	✓	✓	✓	✓		
AO	1.663	1.683		1.676	1.677	1.675	1.676		
AP	0.053	0.073		0.063	0.063	0.063	0.063		
AQ	0.022	0.042		0.032	0.032	0.032	0.032		
AR									
AS									
Accept/Reject									

Measured by:	JNL
Date:	04/02/26

Audited by	ER
Date:	05/04/21

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

RELEASED
03.07.01 RF

DART AEROSPACE LTD	Work Order:	19647
Description: Ø2.250 Support	Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	**Min**	**Max**	**Go/No Go Gauge**	**1**	**2**	**3**	**4**	**By**	**Date**
Lathe Section									
A	2.274	2.279		2.274	2.275	2.275		GNL	04/02/20
B	3.702	3.722		3.716	3.712	3.711			
C	2.564	2.584		2.574	2.574	2.575			
D	0.718	0.738		.733	.734	.734			
E	0.090	0.110		.101	.100	0.100			
F	2.464	2.484		2.474	2.475	2.475			
G	2.029	2.049		2.035	2.036	2.036			
H	2.964	2.984		2.974	2.975	2.975			
I	0.913	0.933		.914	.917	.915			
J	0.022	0.042		R0.032	R.032	R.032			
K	0.090	0.110		.098	0.100	0.098			
L									
HAAS Section									
AA	0.188	0.193	DT8706	✓	✓	✓	✓	GNL	05/04/20
AB	0.240	0.260		0.250	.252	.251	.251		
AC	0.115	0.150		0.129	.129	.130	.129		
AD	0.040	0.060		0.050	.050	.050	.049		
AE	0.010	0.020		0.010	.010	.010	.010		
AF	0.240	0.260		0.250	.250	.250	.250		
AG	0.290	0.310		0.302	.302	.302	.300		
AH	0.115	0.150		0.141	.142	.142	.140		
AI	0.454	0.474		0.463	.460	.463	.463		
AJ	2.779	2.789		2.783	2.783	2.783	2.783		
AK	0.240	0.260		0.250	.250	.250	.250		
AL	1.002	1.042		1.031	1.034	1.034	1.034		
AM	0.053	0.073		0.063	.063	.063	.063		
AN	0.257	0.262	DT8683	✓	✓	✓	✓		
AO	1.663	1.683		1.676	1.673	1.674	1.675		
AP	0.053	0.073		0.063	.063	.063	.063		
AQ	0.022	0.042		0.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by:	GNL / JL
Date:	04/02/20 / 05-04-20

Audited by	ES
Date:	05/04/21

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

RELEASED
03.07.01 RF

DART AEROSPACE LTD	Work Order:	19647
Description: Ø2.250 Support	Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	**Min**	**Max**	**Go/No Go Gauge**	**1**	**2**	**3**	**4**	**By**	**Date**
Lathe Section									
A	2.274	2.279		2.274	2.275	2.274	2.274	ML	04/02/20
B	3.702	3.722		3.710	3.710	3.711	3.716		
C	2.564	2.584		2.574	2.574	2.574	2.575		
D	0.718	0.738		.733	.734	.735	.733		
E	0.090	0.110		.101	.101	.100	.101		
F	2.464	2.484		2.474	2.474	2.475	2.474		
G	2.029	2.049		2.035	2.035	2.036	2.037		
H	2.964	2.984		2.974	2.975	2.976	2.974		
I	0.913	0.933		.914	.916	.915	.916		
J	0.022	0.042		R.032	R.032	R.032	R.032		
K	0.090	0.110		.098	.099	.099	0.106		
L									
HAAS Section									
AA	0.188	0.193	DT8706	—	—	—	—	JL	05/04/20
AB	0.240	0.260		.250	.252	.254	.250		
AC	0.115	0.150		.128	.130	.129	.128		
AD	0.040	0.060		.050	.051	.053	.051		
AE	0.010	0.020		.010	.010	.010	.010		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.301	.300	.300		
AH	0.115	0.150		.142	.141	.142	.143		
AI	0.454	0.474		.463	.464	.462	.464		
AJ	2.779	2.789		2.782	2.784	2.782	2.782		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.032	1.034	1.033	1.028		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262	DT8683	—	—	—	—		
AO	1.663	1.683		1.675	1.674	1.676	1.675		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by:	ML / JL
Date:	04/02/20 05-04-20

Audited by	EF
Date:	05/04/20

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

RELEASED
03.07.01 RF

DART AEROSPACE LTD	Work Order:	19647
Description: Ø2.250 Support	Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	**Min**	**Max**	**Go/No Go Gauge**	**1**	**2**	**3**	**4**	**By**	**Date**
Lathe Section									
A	2.274	2.279		2.274	2.274	2.274	2.275	JMC	04/02/20
B	3.702	3.722		3.710	3.711	3.712	3.713		
C	2.564	2.584		2.574	2.575	2.575	2.574		
D	0.718	0.738		.733	.735	.732	.733		
E	0.090	0.110		0.101	.101	.100	0.101		
F	2.464	2.484		2.474	2.475	2.476	2.474		
G	2.029	2.049		2.035	2.034	2.035	2.037		
H	2.964	2.984		2.974	2.975	2.976	2.974		
I	0.913	0.933		.914	.914	.916	.915		
J	0.022	0.042		R.032	R.032	R.032	R.032		
K	0.090	0.110		.098	.098	.099	.099		
L									
HAAS Section									
AA	0.188	0.193	DT8706	—	—	—	—	JMC	05/04/21
AB	0.240	0.260		.252	.251	.253	0.254		
AC	0.115	0.150		.128	.130	.128	0.128		
AD	0.040	0.060		.053	.053	.049	0.052		
AE	0.010	0.020		.010	.010	.010	0.010		
AF	0.240	0.260		.250	.250	.250	0.250		
AG	0.290	0.310		.302	.300	.306	0.300		
AH	0.115	0.150		.140	.138	.140	0.143		
AI	0.454	0.474		.463	.463	.463	0.457		
AJ	2.779	2.789		2.782	2.783	2.783	2.784		
AK	0.240	0.260		.250	.250	.250	0.250		
AL	1.002	1.042		1.034	1.032	1.028	1.030		
AM	0.053	0.073		.063	.063	.063	0.063		
AN	0.257	0.262	DT8683	—	—	—	—		
AO	1.663	1.683		1.663	1.674	1.675	1.677		
AP	0.053	0.073		.063	.063	.063	0.063		
AQ	0.022	0.042		.032	.032	.032	0.032		
AR									
AS									
Accept/Reject									

Measured by:	JMC / J.L
Date:	04/02/20 / 05/04/20

Audited by	EC
Date:	05/04/21

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	RF

RELEASED
03.07.01 RF

Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Dec 19, 2003
08:01 am

Work Order No	: 0019647		
Project Name	: D2891-1	Department Code:	
Project For	: WK344	Burden Flags	: NNNNNNN
Work Order Type	: Main	WO Status	: Open
Main WO Number	:	Invoice State	: Not Invoiced
House Part Number	: D2891-1	Invoice Date	:
Description	: Support 2.25 dia	Invoice Number	:
Manufactured	: Yes	Invoice Amount	: 0.00
Amount Req'd	: 30		
Amount Done	: 0	Order Entry No	:
Start Date	: 09-11-03	OE Value	: 0.00
Est Finish Date	: 10-07-03		
Act Finish Date	:	Est Margin	: 0.000%
Drawings Reqd	: No	Actual Margin	: 0.000%
Ok for Approval	:		
Approval Rec'd	:	$0 Posted to Finished Goods	

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Margin :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	0.00

PACKING LIST

CUSTOMER	SHIP DATE	GROSS WEIGHT	QUOTE	
96294	01/05/04 SHP	154	30-106279-1	OF 1
			ORDER DATE	TEST RESULTS
BILL TO:	WORK ORDER **		12/23/03 ORD	
DART AEROSPACE	UL9005		DELIVERY DATE	SHIP BRANCH / SELL BRANCH / WORK ORDER
			01/05/04 DEL	30(04) / 30-TOR / UL9005

SHIP TO

DART AEROSPACE 01
1270 ABERDEEN ST
HAWKESBURY ON CANADA K6A 1K7

6905 KENDERRY GATE, MISSISSAUGA ONTARIO, CANADA L5T 2Y8
Copper and Brass Sales Canada
A ThyssenKrupp Materials NA company
ThyssenKrupp

CUSTOMER P.O. NUMBER	TERRITORY	ENTRY ID
2005942	01	30JLL

BUYER	INSIDE SALES
LINDA LACELLE	30JLL JAMES L. LUNN
BUYER TELEPHONE (613) 632-3336	INSIDE SALES TELEPHONE (905) 696-8100 230

CUSTOMER SIGNATURE: DATE:

QUANTITY	ORDERED	SHIPPED
INVENTORY	139.31 LB	139.00
BILLING	15.00 PC	15.00
WAREHOUSE		

SHIP VIA	SHIPPING STATUS		
INTERNAL	COMPLETE	PARTIAL	CANCEL
	X		

TO CUSTOMER	FOB	PACKED WITH OTHER GOODS
COMMON/TST	DEST	
BILL OF LADING	FREIGHT STATUS	FINISHED GOODS LOCATION
	PPD	

PART DESCRIPTION 408406-7

RD T-17-4 CF COND A STAINLESS STEEL BAR, 3-1/4 (+/-.003) X 11-13 FTRL
-DART AEROSPACE, CUT 3.8" (+.125,-0)
Cust PART No: D6104-003.

aml 04/1/16

Cust Part: D6104-003

SPECIAL INSTRUCTIONS

"Shipping, do not place any packages or goods on top of our material."

FULL	SCRAP	FILLED BY	PACKED BY	Q/A AUDIT
		CW		

CUSTOMER RECEIVING HOURS	MAX SKID WEIGHT	LOADING INSTRUCTIONS	MAXIMUM BUNDLE WEIGHT

BOXES	BARS	CASES	CUSHP	PKGS	SKIDS	BDLS	TUBES	CTNS	FLAT	COILS
1										

INSPECTION RECORD														

TEST RESULTS -----
CERTIFICATE OF COMPLIANCE

We hereby certify that mercury or any of its compounds are not used in the processing and distribution of our products. The products we distribute are not hazardous in their received state. For MSDS sheets go to www.copperandbrass.com/msds or call 313-567-5282. We hereby certify that the material above complies with the following specifications:

ASTM-A564 AMS 5643

TAG NO	QUANTITY	UOM	VENDOR	VEND PO HEAT/LOT	PCS	TAG NO	QUANTITY	UOM	VENDOR	VEND PO HEAT/LOT	PCS
	139.00	LB	TALLY	0C44029 G8390							

MARY L. TAYLOR - General Manager: TORONTO PRINTED 01/02/04 10:41 AM CONTROL NO 00050

CERTIFICATE OF TESTS — ABNAHMEPRUEFZEUGNIS — CERTIFICAT DE CONTROLE

CERT SERIAL# 000414336

TALLEY METALS
A Carpenter Company

Talley Metals Technology, Inc
P.O. Box 2498
Hartsville, SC 29551 Tel 843 335 7540 Fax 843 335 6465

10/10/03
CUSTOMER / BESTELLER / CLIENT

COPPER & BRASS SALES
400 RENAISSANCE CTR
01TROIT ,MI 48243

SELLER / VERKÄUFER / VENDEUR PAGE - 1

TALLEY METALS TECH, INC.
ACCOUNTS PAYABLE
P. O. BOX 2498
HARTSVILLE ,SC 29551

PN 408406

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
C44029	TLY598701 L13755	10/10/03	1830.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : G8390

PRODUCT DESCRIPTION: TYPE 17-4 SOLUTION ANNEALED COLD FINISH

SPECIFICATION: TALLEY 174-T1A CAP OF H900 (01/11/99)
AMS 2303 REV E (10/ /01)
AMS 2315 REV E (04/ /01)
AMS 5643 REV Q (01/ /03) (EXCEPT CD ROUND CHEM & MECH PROPS ONLY)
ASTM-A484-03A
ASTM-A564-02A
ASME-SA564 2001 EDITION

SIZE 3.250000 IN.(82.55 MM) RD BAR

PRIMARY HEAT CHEMISTRY(WT%):

C	MN	SI	P	S	CR
0.028	0.87	0.35	0.023	0.025	15.30
NI	**MO**	**CU**	**N**	**CB**	**TA**
4.30	0.35	3.76	0.029	0.26	0.01

CB+TA
0.27

THIS MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL REVISION 22, DATED 3/02.

DISCS MACROETCHED AND APPROVED

HARDNESS AS SHIPPED, HB - 358 (MIDRADIUS)

MAGNETIC PARTICLE: FREQUENCY = 0 / SEVERITY = 0

MICROSTRUCTURE - FERRITE 1.40%

COPPER AND BRASS SALES
SOLD TO: Copper & Brass
DATE: 12/09 QTY: 1395
CUSTOMER PO: 2005942
SHIPPER NO: 41402
BY:

CONTINUED ON NEXT PAGE

FORM F2-366

CERTIFICATE OF TESTS — ABNAHMEPRUEFZEUGNIS — CERTIFICAT DE CONTROLE

CERT SERIAL# 000414336

TALLEY METALS
A Carpenter Company

Talley Metals Technology, Inc
P.O. Box 2498
Hartsville, SC 29551 Tel. 843.335 7540 Fax 843 335 6465

10/10/03

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE - 2

COPPER & BRASS SALES
400 RENAISSANCE CTR
01TROIT ' ,MI 48243

TALLEY METALS TECH, INC.
ACCOUNTS PAYABLE
P. O. BOX 2498
HARTSVILLE ,SC 29551

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
C44029	TLY598701 L13755	10/10/03	1830.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : G8390

CAPABILITY

900 F(482 C), 01 HR	AIR COOL
YIELD STRENGTH, (0.20 %) KSI(MPA)	181.0(1248)
TENSILE STRENGTH, KSI(MPA)	203.0(1400)
ELONGATION IN 2.00", %	14.0
REDUCTION OF AREA, %	47.0
HARDNESS , HB -	431.0 (MIDRADIUS)

SOLUTION ANNEALED - 1900 F, 1 HOUR - RAPID COOL

MATERIAL WAS MELTED AND MANUFACTURED IN THE USA.
NO WELD REPAIR

WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

STEPHANIE E. MCCULLUM
QUALITY ASSURANCE ENGINEER
CARPENTER TECHNOLOGY CORPORATION

408406-7

Stephanie McCullum

FORM E2-366